

AMERICAN VETERINARY REVIEW,

NOVEMBER, 1893.

EDITORIAL.

FIRST INTERNATIONAL VETERINARY CONGRESS OF AMERICA (THIRTIETH ANNUAL MEETING UNITED STATES VETERINARY MEDICAL ASSOCIATION).—The Thirtieth Annual Meeting of the United States Veterinary Medical Association and First International Congress has now become a matter of record, and it is an opportune time to carefully weigh what it has accomplished, the scope of its work, and what we may possibly consider will be its effect upon the veterinary profession of the future, and how well it has discharged the grave responsibilities resting upon it in directing the affairs of the veterinary profession from a national standpoint.

With an average attendance at each session, numbering seven sessions in all, of 125, with a total of about 200 representatives of the profession in attendance during the Congress, it may well be said that it was a success from a national standpoint if not from an international one. The lateness of the time of holding the Congress militated very much against its success in point of foreign representation, though many were the kind letters, contributing memberships, and much interest taken in its success by those debarred from being with us.

It proved an opportune time for the Association to recognize under honorary membership a number of foreign veterinarians, to whom the veterinary profession of America were

deeply indebted to for valuable contributions and work done in the past, of which they have been favored by translations and selections by our American veterinary journals. Upon some twelve foreign veterinarians was conferred honorary membership in the organization, recognizing in this direction Austria, Belgium, Denmark, France, Germany, Great Britain, Holland and Italy, while an honorary membership in the Congress was conferred upon some thirty-three members of the profession, covering some twelve countries.

Never, perhaps, in the work of conferring its privileges of active membership was there such close scrutiny and great care exercised in rendering their decision upon the list of those applying for this honor, and it is extremely gratifying to note that all of the recommendations of the Comitia Minora in this direction were unanimously adopted by the Congress in session. Some eighty-five applications were under consideration, over twenty per cent. of which failed to receive favorable recommendation at the hands of the Comitia Minora. The Comitia Minora declined recognizing the Detroit Veterinary College and the Ohio Veterinary College. It likewise considered that the New York College of Veterinary Surgeons during the years of 1892 and 1893 was not properly equipped, from a veterinary point of view, in their faculty to graduate students sufficiently qualified for membership in the United States Veterinary Medical Association. Some others, whose application exhibited evidence that they were not in accord with the rules of the Association, were likewise declined.

The adoption of an Association emblem for use by the members was considered and adopted, and the form of insignia selected was the seal of the Association. The privilege of the use of said seal to be under the direction and regulation of the Secretary.

The Comitia Minora, rigidly adhering to its rulings of the past three years, were gratified to find so few names on the list requiring consideration for failure to comply with the rules and regulations of the Association in regard to the payment of initiation fee and dues. The deaths of Drs. F. H. Gage

and J. F. Mustoe were reported, and suitable action taken. A resolution was also recommended by the Comitia Minora and adopted by the Association that there should be a more rigid adherence to the Code of Ethics on the part of a few members of the Association who were reported in violation of the same.

The reports of the various committees, which occupied the first day's session, were, on the whole, the most complete, broadest and best that the Association has ever been favored with. No field within their jurisdiction seemed to have been overlooked, and many valuable suggestions were made that are destined to enhance and make better the work of the Association. It was decided in the discussion of its reports that the organization should seek an act of incorporation in the present Congress.

The programme proved to be overloaded with material, a very gratifying evidence of the interest taken by the members of the Association, and of the importance ensuing from the consideration of these topics by the national organization. Some of the papers, specially those on "Mille. Disease of Horses" and "Biliary Hepatitis in Cattle," were particularly valuable in brushing away a great deal of material that had obscured the proper consideration of these maladies, and of outlining in a very clear manner the channels from which future work should be done in the hope of mastering these serious problems.

The consideration of "Surgical Interference in the Treatment of Periodic Ophthalmia" was a new field for consideration and observation. An utter lack of time prevented a thorough discussion of the subject, but the evidence offered by the author will lead to a serious consideration during the coming year as to its value by many members of the organization.

One of the best papers and most complete as to its records, etc., on the very old and important subject, that of "Fistulæ," was most exhaustively handled by the author, and there is a great deal of promise that the time necessary in the complete treatment of these cases will, in all probability, be very

much shortened, a point of great importance and one very much to be desired both by the veterinarian and the owner.

One of the most gratifying features of the Veterinary Congress was a well-timed article relative to "The Existence or Non-Existence of Contagious Pleuro-Pneumonia in the United States," because the statements therein contained were based upon a better knowledge, a more thorough investigation and more earnest consideration by a non-interested member of the profession, not in any way connected officially with any Bureau, and his firm, unanswerable statements that this disease does not exist in the United States to-day in any form was received with the warmest evidence of approval and interest, and makes unexplicable the present decision and status of that part of the veterinary profession in Great Britain relative to the commerce in animal industry with our country unfair and untenable. The presence of members of the profession from Canada with an array of equally unanswerable testimony added much to the interest in the consideration of this topic, and called forth the adoption of resolutions asking that the restrictions and embargoes militating against the commerce in this direction should be removed by Great Britain, and likewise between the United States and Canada.

"The History and Future Prospects of Veterinary Science, and its Relation to Ethics," and the considering of a better plan of "Inspection of Southern Cattle Moving Northward," were all duly considered, and it was the general sentiment of the members in attendance that were the laws now adopted by the Bureau of Animal Industry properly enforced, that the danger would be placed at the minimum point and the objections would be little heard of. Some other papers were ordered to be printed in the transactions of the Association.

The three special topics for consideration were all properly handled by the Committees having them in charge. The grounds which they had covered on veterinary education, tuberculosis and animal food supply were all of such great interest, and the thoroughness and completeness with which they were handled by the committees left little for further consideration. The subject of veterinary education as handled

seems to have won the most earnest approval of those present, and this approval was in hearty accord with the progressive and determined action of the Association the past year in regard to fixing the qualifications, and were the propositions submitted by the Chairman adopted by the various veterinary colleges of our country there would be little left for the Board of Censors to do in examining the applications for membership in the national organization.

The position taken by the Committee on tuberculosis on the possibility of plans being adopted to eradicate this disease was a surprise even to those who were most sanguine of some plan for the mastery of this disease, and it met with the hearty approval of the members of the Congress assembled.

The consideration of the Animal Food Supply of our country was a timely paper and exhibited an aggressive position by our national Government in protecting our interests, and that all the steps which made manifest the better regulation of the handling of these products were being well considered by the Government and more efficient work was promised in the future.

A complete resume of the important subject of "Swine Plague and Hog Cholera," from the standpoint of an investigation of the work done by those whose results have been before the profession and the public for a number of years, was one of the most delightful elaborations that the Association has ever had the pleasure of listening to. The fitness, thoroughness and completeness with which this work has been done, and the light shed upon this all important topic will be ever and anon remembered and recalled as a fitting climax to the many hard fought battles of those who had for many years been known to us as investigators on this subject; and when printed and placed before the profession of the country in the transactions of the Association will be found to be a source of the best knowledge to be had upon this subject up to this time.

The election of officers for the ensuing year resulted in some severe changes, and for the first time in its history the main work of the organization will rest upon young shoulders.

The Secretary for the past four years succeeded to the office of President, and the incoming Secretary falling to the lot of Dr. T. J. Turner, Columbia, Missouri. Dr. Clement was re-elected to the Vice-Presidency, and the retention of the well known Treasurer, Dr Jas. L. Robertson, followed as the unanimous choice of the organization.

The pleasant trip to the stock-farm of Mr. Dunham on Thursday afternoon, the courtesy of the Illinois veterinarians, was a pleasant episode of the kind. The farm exhibited some worthy representations of the French coaching and Percheron stallions; and the kind hospitality with which the members were entertained by the owner will be always remembered with a great deal of pleasure.

The banquet at the Auditorium Hotel, on Friday evening, was one of the most enjoyable occasions the Association's members have ever indulged in. The royal feast with sweet strains of music, and the witty and pointed toasts by those selected for responses, fittingly closed the first Veterinary Congress of America.

W. H. H.

ORIGINAL ARTICLES.

MILLET DISEASE IN HORSES.

By T. D. HINEBAUCH, D.V.S., Fargo, N. D.

A Paper presented to the First International Veterinary Congress of America,
(U. S. V. M. A.)

During the winter of '91 and '92 a disease existed among horses that had been fed on millet. It was known as millet disease, and existed to a great extent wherever millet was used as food. There was an average death-rate from seven to ten per cent. On many farms the death rate was considerably higher, while on others no animal succumbed to the disease. A few of the animals affected remained permanently diseased, the disease having settled in the joints.

The condition of the millet at the time of harvesting seemed to make no difference in regard to the virulence of the attack.

That which was cut when about one-fourth headed produced the same results as that which was fully headed, or that which had partly ripened.

The symptoms as observed were as follows: For a number of days previous to the attack the kidneys acted very freely. This continued several days when their action was much less than the normal. Muscles of shoulders, chest, loins and haunches stiff and sore. Later on there is soreness of the joints, usually the stifle and hock. This often changes from one leg to another, or from the hind to the fore extremities. There are well-marked symptoms of pain with a slight amount of fever. The temperature usually varies from 102 to 104 degrees. In exceptional instances it may reach 106 degrees but soon recedes. The pulse is more frequent and hard. The fever is remittent rather than continued, and varies according to the intensity of the pain. At no time is the animal free from pain or fever during the course of the disease. It is a continued succession of ups and downs, gradually growing less marked until the disease finally comes to an end. Membranes of the eye reddened, tongue coated, mouth hot, dry and sticky, having a peculiar sour odor. Bowels constipated, urine scanty, thick and stringy. The pain in the muscles causes the animal to assume a cramped or drawn together position, with back arched and a well-defined line along the lower ends of the ribs. He has no disposition to move, but if made to do so, has a straddling, ungainly, painful gait, frequently groaning at every step. Occasionally the animal lies down and is unable to rise, more from the severe pain than from any changed condition of the muscles or joints. At first there is profuse sweating, especially in the region of the affected muscles. The animal will flinch and show more or less evidence of pain; or, if pressure be applied to the affected joints, the same result will be manifest. If the horse be down he will lie comparatively quiet, and occasionally makes a feeble effort to rise. The intense pain that this movement causes induces quietude again, and it is seldom that he will rise, even if persistently urged to do so. There is loss of appetite, the animal generally assuming a painful ex-

pression. Should any region other than the one just indicated be affected, similar symptoms will manifest themselves by special movement or manipulation of the diseased part.

When the disease occurs in mares there is frequently slight tumefaction of the vulva, which extends into the vagina a variable distance. Underneath the external membrane the connective tissue is engorged with serum, until in some instances the swelling assumes immense volume. Fomenting the swollen parts for a considerable length of time (from one half to two hours) reduces them to nearly their normal condition. The effect, however, is not permanent, the parts becoming infiltrated in the course of two or three hours. The above condition exists regardless of pregnancy, animals not in foal showing the same condition as those which are in foal. I am at a loss to state what should induce the above symptoms unless it be merely external manifestation of a general diseased condition of the generative and urinary organs. Pregnant mares showing the above symptoms do not always abort, but give birth to a healthy foal at the end of the usual period of gestation.

A number of those cases which came under my observation showed well-marked pleuritis and pleurodenia, the pleurisy being very severe and accompanied by a fever ranging from 103 to 104 degrees. With vigorous treatment it usually subsided within twenty-four to forty-eight hours, the joints then gradually becoming affected until the typical form became established.

Duration of the Attack.—There is no definite limit to the time a horse may suffer from a single attack. Mules, which also are subject to the disease, have a severer form which lasts much longer. As far as my experience goes, I have never seen a mule recover entirely under from five weeks to as many months, and are more apt to remain permanently unfit for work.

Some cases recover in a week or ten days, while others linger for several weeks or months. This is especially the case if the acute form gives way to the chronic. Colts yield

more readily to treatment than older horses. In fact the older the horse the more severe will be the disease.

In describing the various cases to which we shall allude, the history, surroundings and treatment of the animals prior to the attack, symptoms, treatment and termination of the disease will be considered in each individual instance. We will not attempt to describe all cases we have treated, but select the first two and the last two, as we consider them a fair average of the total number.

CASE I.

Bay mare eight years old, weight about 1,150 to 1,200 pounds; in foal, due in two months; was found lying on her right side; health previously good; had never been sick while in possession of present owners, who purchased horse at five years old; bred and raised in Iowa.

Surroundings.—Barn low, housed forty mules and horses; no special means of ventilation; ceiling covered with frost which had been gradually melting and dropping down upon the stock, all of which were more or less wet; fed on millet in good condition, cut when about one-fifth headed out; grain consist of bran principally, some receiving one feed of oats per day; during the day the stock ran in a yard, having access to wheat straw.

Symptoms.—Animal was found lying on her right side, rising on haunches like a dog, and groaning as though in intense pain, breathing distressed, number of respirations increased to eighteen per minute, flank and shoulder covered with sweat; manipulation of hock and stifle joints induced severe pain; pulse 80, wiry and full; temperature 104° F.; the animal was raised by means of slings, and after remaining in them half an hour was able to stand without assistance, but would not move; the lips of the vulva were much swollen, having a semi-transparent appearance; the evacuation of the bowels showed the secretion to be normal; urine scanty, clear and light colored; the breath had a disagreeable, sour odor.

The case was diagnosed as rheumatism, and the following treatment prescribed: Fomentation of the vulva until swell-

ing disappears; pure water containing nitrate of potash in quantity sufficient to allow two oz. per day; hay and bran, dry bedding; use of sling, and internally, sodium salicylate, 2 oz., aqua, 8 oz. Give one ounce every six hours.

Saw the animal two days later, when a marked improvement was noticed; temperature, 102.5°F.; pulse, 60; not nearly so wiry; respiration, 12 per minute; appetite good; water taken in moderate quantities; changed the treatment by discontinuing the nitrate of potash, and giving the following: Sodium salicylate, 2 oz.; fl. ext. gentian, 2 oz.; aqua, 8 oz. Give one ounce three times per day.

Did not see the mare again, but was informed that she entirely recovered in about ten days, and when due gave birth to a healthy foal.

CASE II.

Sorrel mare eleven years old, due to foal.

History.—Health good; had never suffered from any disease; had raised two colts, both of which were healthy. For several days previous to my visit the mare showed lameness, which gradually increased in severity; loss of appetite; seemed to drink more than usual; first indication of lameness in left hind leg; was then called to prescribe for the mare.

Surroundings.—Barn contained carriage room, one box and three single stalls; ventilation poor, ceiling covered with frost, which was melting and dropping on the stock; floors so wet that bedding was wet all the time.

Feed.—Millet, hay and straw. The millet and oats had been seeded together, and both were headed when cut for hay. Grain ration consisted of two quarts nice clean oats as a feed three times per day.

Symptoms.—At time of consultation there was but a small quantity of urine secreted, light colored and clear; great lameness in left hind leg; all the joints were affected, the hock, stifle and fetlock being especially sore and tender to the touch; tucked up appearance of the abdomen; respiration, 12 per minute; temperature, 102.5°F.; the animal would stand up part of the time, disliked to lie down, and when down would not rise unless urged to do so; the third day

after the attack she foaled a healthy colt ; through the carelessness of the attendant the colt became chilled by being allowed to lie in the water which came to it, and died in thirty-six hours. The mare refused to get up ; was then placed in slings, and during her endeavors to stand ruptured the tendon of the flexor pedis perforatus of the right hind foot from its insertion. She was then destroyed.

Treatment.—Consisted of stimulants and salicylate of soda and nitrate of potash. There was an improvement up to the time of foaling, but at that time the symptoms became aggravated.

CASE III.

History.—Bay mare, age unknown, had given birth to a healthy foal three weeks prior to my being called. Foal healthy at present time (seven months old).

Surroundings.—Ventilation imperfect ; banked barn ; walls dry ; fed on millet hay two-thirds headed out ; oats, three quarts.

Symptoms.—Found the animal lying down ; endeavored to get up by the use of slings ; would not bear any weight on hind legs ; pain upon pressure of any of the joints of hind leg and also in gluteal region ; temperature, 104° F.; respiration, 20 ; pulse, 70 ; rigors and distressed appearance.

After thirty-six hours' treatment the attendant attempted to raise the mare and let her drop, killing her almost instantly. During the struggle she ruptured the gastrocnemius externus from its insertion, allowing the summit of the os calcis to protrude through the skin.

POST-MORTEM.

I held a post-mortem on both of the hind legs, and found them essentially the same in morbid appearances. I will describe the lesions as they occurred in the left hind leg, those of the right leg being fully as severe. The insertion of the abductor magnus was torn from its attachment, and carried with it particles of bone ; the portion of bone which was removed was nearly circular in shape, a little pointed at the upper extremity, and in all covered about one and one-half

square inches; the region of the popliteus was torn loose, and also carried with it small particles of bone; the bone exposed was somewhat softened; it was also severed from its attachment to the capsular ligament of the stifle joint; the capsular ligament of the patella showed marked infiltrations, with a diminished supply of synovial fluid; in fact, the absence of synovial fluid was well marked in all the joints; there being scarcely a trace left in some of them; the insertion of the triceps abductor femoris, the tensor fascia lata and quadriceps cruralis were also torn loose from the bone, and, as was the case with the other muscles, carried with them particles of bone; the bursa at the side of the hock through which the tendon of the peroneus muscle passed was dry and contained scarcely a trace of synovial fluid; the parts adhered to each other, showing that the condition had existed for some little time previous to death; the gastrocnemius externus was also ruptured from its attachment, allowing the hock to become flexed; the summit of the os calcis protruded through the soft tissues and skin so that it was exposed to sight; no synovial fluid found in the hock joint; the external straight ligament of the patella, the external middle inferior sesamoidean ligament, the right branch of the superior sesamoidean, the lateral ligaments of the pastern joints and the two posterior ligaments of the same joint were torn from their attachments; the capsular ligament of the fetlock joint perforated at its postero-infero aspect, and also near the center of the postero-internal aspect.

The Joints.—The distal extremity of the femur presented indentations on both condyles and trochlea. On the condyles they were small, pit-like, some round, some oblong, while some were long and narrow, having the appearance of a line. The trochlea was smooth, and at its inferior portion the cartilage had become nearly worn away, so that distinct grooves were noticeable where it came in contact with the patella.

The Patella.—The texture of the patella was spongy, being not nearly so hard and compact as the average. A portion of its ligamentous attachments had given away, exposing the cancellated structure of the bone. Its posterior surface, which

articulates with the trochlea of the femur, especially the innermost concavity, contained numerous indentations, exhibiting a partial destruction of the cartilage. These indentations were nearly all oval, a few of them triangular in shape, pit-like, and some of them quite deep. In the chest inside the lateral borders abrupt eminences composed wholly of cartilage existed.

The Tibia.—The proximal extremity showed indentations similar in character, but not nearly so numerous as those which existed on the distal extremity of the tibia, and also showed more marked deterioration than any of the other joints in the limb. The cartilages in the articular grooves had completely disappeared in the center, leaving the bone exposed. The disease had not existed long enough evidently to allow porcelaneous deposit to take place; it was somewhat roughened in character. The ridges of the astragalus contained numerous small indentations at their acute angle, and showed an almost entire absence of the articular cartilage.

Fetlock Joint.—Changes similar to those of the femoral patella and tibia joint. The pastern joint showed very little change, and that on the distal extremity of the os suffraginus. All the articular surfaces of the os coronæ, of navicular and os pedis were normal, with the exception of two small spots which existed on the articular surface of the os pedis where it articulates with the os corona.

The ill effects of the feeding of millet occurs mostly during cold weather, and in horses that are not at work. Whether cold of itself is an important factor, or not, we are unable to say, but we think it has more or less to do with the diseased condition. One very important factor is the want of proper ventilation. The greatest number of affected animals belonging to any single farm were invariably found in barns where ventilation was the poorest. In fact we cannot call to mind but a very few cases where the ventilation was good. These cases were less severe than those where the stables were illy ventilated. They also recovered much more quickly.

The question of proper ventilation is not so serious a one where extremely low temperatures do not occur. But where there is extreme cold, as in our region, the thermometer going as low as -40 to -50 degrees Fahr., and remaining below -20 degrees F. for several weeks at a time, and accompanied by high winds, then the matter of properly ventilating a barn becomes a serious question.

September 7th, 1893, we began a series of experiments to determine accurately the effects of millet upon horses. We selected three geldings, one three years old, one five years, and the other six years. The three-year-old could not be handled satisfactorily, and was thrown out after having been in the experiment for five days. The other two were continued over a period lasting from September 7th to October 4th inclusive. The first period lasted from September 7th to September 20th, it being a preliminary one. During that time the horses received hay and oats. On September 20th the feed was changed from hay to millet, the same number of pounds of millet being given as they had consumed of hay. The millet was less than half headed out, and was secured in good order: the oats were old, and in good, first-class condition, the same oats being fed during both periods. On October 1st hay was again substituted for millet in order to place the animals again in a normal condition. The results of this experiment will be found tabulated in the following pages.

HORSE HARRY.				HORSE JIM.			
DATE.	NITRO- GEN.	TOTAL SOLIDS.	ASH.	DATE.	NITRO- GEN.	TOTAL SOLIDS.	ASH.
Sept. 13	1.55	9.50	2.05	Sept. 13	1.55	10.52	2.74
" 17	1.58	11.65	2.90	" 17	1.61	10.52	2.84
" 21	1.16	10.08	1.88	" 18	1.44	12.03	3.61
" 25	.96	5.18	1.90	" 21	1.21	9.50	2.26
Oct. 4	1.33	7.48	....	" 22	1.12	....	....
				" 25	.68	6.14	2.15
				Oct. 4	1.53	8.37	....

HARRY, S. G., 7 YRS. OLD.										JIM, BL. G., 5 YRS. OLD.									
1893.		Tem. Fah.		Water.	Hay.	Oats.	Salt.	Urine.	Weight.	Tem. Fah.		Water.	Hay.	Oats.	Salt.	Urine.	Weight.		
		Alr.	Horse.															Alr.	Horse.
Sept. 7	A.M.	54	.....	30	8	4	.....	.....	.....	.....	.....	15	8	4	.....	.....	.....
	N.	64	.....	41	8	4	.....	.....	.....	.....	.....	13	8	4	.....	.....	.....
	P.M.	67	.....	32	8	4	.....	.....	.....	.....	.....	40½	8	4	.....	.....	.....
8	A.M.	65	.....	20	8	4	.....	.....	.....	99.8	35	8	4	.....	.....	.....	.....
	N.	82	100.6	9	8	4	.....	.....	.....	99.8	0	8	4	.....	.....	.....	.....
	P.M.	83	100.2	44	10	4	.....	.....	.....	100.4	41	8	4	.....	.....	.....	.....
9	A.M.	65	100-2	29	10	4	.....	.....	.....	99.8	36	8	4	.....	.....	.....	.....
	N.	84	100.4	21	10	4	.....	.....	.....	100.	11	1	4	.....	.....	.....	.....
	P.M.	80	100.6	13	14	4	.....	.....	.....	100.6	43.5	8	4	.....	.....	.....	.....
10	A.M.	65	99.8	40.5	9	4	1oz.	.....	.....	99.4	22	7	4	1oz.	.....	.....	.....
	N.	83	1 0.8	0	9	4	.....	.....	.....	100.2	11	7	4	.....	.....	.....	.....
	P.M.	75	100.4	62	9	4	.....	.....	.....	100.	41	7	4	.....	.....	.....	.....
11	A.M.	75	100.4	56	9	4	1oz.	.....	1390	100.	37	7	4	1oz.	.....	.....	.....
	N.	89	100.2	28.5	9	4	.....	.....	.....	99.8	14.6	7	4	.....	.....	.....	1258
	P.M.	80	101.8	55.5	9	4	.....	.....	.....	101.	53	7	4	.....	.....	.....	.....
12	A.M.	67	100.	15.5	9	4	.....	.....	1308	100.2	11	7	4	.....	.....	.....	.....
	N.	84	100.8	14	9	4	.....	.....	.....	100.8	28	7	4	.....	.....	.....	1298
	P.M.	84	101.6	60.5	9	4	.....	.....	.....	101.4	37.6	.....	.....	.....	.....	.....	.....
13	A.M.	70	101.4	35.5	9	4	1oz.	.....	1370	101.2	38.6	3.5	4	1oz.	.....	.....	.....
	N.	82	101.	25	9	4	.....	lb. oz.	17 14	100.8	13	7	4	.....	.....	.....	.....
	P.M.	67	100.6	47	9	4	.....	.....	.....	101.	27.5	7	4	.....	.....	12 8	.....	
14	A.M.	54	100.4	10.5	9	4	.....	.....	1360	100.6	12	7	4	.....	.....	.....	.....
	N.	77	100.8	23	9	4	.....	lb. oz.	17 14	.....	14.6	7	4	.....	lb. oz.	16 8	.....	
	P.M.	66	.....	30	9	4	.....	.....	.....	.....	44	7	4	.....	.....	.....	.....
15	A.M.	54	.....	20	9	4	.....	.....	1340	.....	26.5	7	4	.....	.....	.....	.....
	N.	62	100.2	11.5	9	4	.....	.....	.....	100.	18.5	7	4	.....	.....	.....	.....
	P.M.	58	100.4	36.5	9	4	1oz.	.....	.....	100.6	25	7	4	1oz.	.....	.....	.....
16	A.M.	41	100.4	21	9	4	.....	.....	1350	100.	15.5	7	4	.....	.....	.....	.....
	N.	62	101.2	22.5	9	4	.....	.....	.....	101.	26	7	4	.....	.....	.....	1245
	P.M.	62	100.6	37.5	9	4	1oz.	.....	.....	100.6	26.5	7	4	1oz.	.....	.....	.....
17	A.M.	56	100.2	3	9	4	.....	lb. oz.	13 8	100.2	6	7	4	.....	.....	.....	.....
	N.	76	100.4	45.5	9	4	.....	.....	.....	99.8	45.5	7	4	.....	.....	.....	.....
	P.M.	74	100.6	36	9	4	1oz.	.....	.....	101.2	28	7	4	1oz.	.....	.....	.....
18	A.M.	48	100.8	40	9	4	.....	.....	1340	100.2	28.5	7	4	.....	.....	.....	.....
	N.	59	.....	0	9	4	.....	.....	.....	.....	9	7	4	.....	.....	.....	.....
	P.M.	53	100.	38	9	4	1oz.	.....	.....	99.8	27½	7	4	1oz.	.....	.....	.....
19	A.M.	40	100.8	27	9	4	.....	lb. oz.	15 14	101.	26	7	4	.....	.....	.....	.....
	N.	56	100.2	3	9	4	.....	.....	.....	100.	0	7	4	.....	.....	.....	.....
	P.M.	54	100.4	10	9	4	1oz.	.....	.....	100.4	39½	7	4	1oz.	.....	.....	.....
20	A.M.	57	100.2	19½	9	4	.....	.....	.....	100.4	20	7	4	.....	.....	.....	.....
	N.	70	101.	0	9	4	.....	lb. oz.	14 0	101.	0	7	4	.....	.....	.....	.....
	P.M.	75	100.2	56	9	4	1oz.	.....	.....	100.	53	7	4	1oz.	.....	.....	.....
21	A.M.	51	100.2	44	9	4	.....	.....	1328	101.	35	7	4	.....	.....	.....	.....
	N.	58	100.8	23.5	11	4	.....	.....	.....	100.4	23.5	9	4	.....	.....	.....	.....
	P.M.	56	100.6	53.5	9	4	1oz.	.....	.....	100.4	34.5	7	4	1oz.	.....	.....	.....

At 6 p.m. of the 20th, millet was substituted for hay, and continued as the coarse feed. The millet was nearly half-headed out. No heads were fully developed.

Temperatures are Fahrenheit. Weights are lbs. and oz. Urine record extends from 6 p.m. to 6 p.m. (24 hours).

* Specific gravity.

HARRY, S. G., 7 YRS. OLD.										JIM, BL. G., 5 YRS. OLD.									
1893.		Tem. Fah.		Water.	Millet.	Oats.	Salt.	Urine.	Weight.			Tem. Fah.		Water.	Millet.	Oats.	Salt.	Urine.	Weight.
		Air.	Horse.																
Sept. 22	A.M.	41	100.6	0	9	4	23 1/4	1340	100.8	0	7	4	23 1/4	1238
	N.	57	99.8	39.5	9	4	....	23 1/4		....	98.8	41.5	7	4	....	....	....	23 1/4
	P.M.	63	100.4	45	9	4	1oz.	*1.045		....	100.4	35	7	4	1oz.	....	....	*1.045
23	A.M.	36	100.	0	9	4	1oz.	33 11 1/2	1342	36	99.6	0	7	4	1oz.	37 5	1212
	N.	50	99.2	35	9	4	....	33 11 1/2		50	100.	42 3/4	7	4	....	....	....	37 5
	P.M.	49	100.	50	9	4	....	*1.038		49	100.6	13 1/2	7	4	....	....	....	*1.038
24	A.M.	37	101.	29	9	4	1oz.	33 11 1/2	37	100.4	36	7	4	1oz.	38 8 1/2
	N.	47	99.8	8	9	4	....	*1.031		47	98.8	0	7	4	....	....	....	38 8 1/2
	P.M.	42	99.8	39 1/2	9	4	....	*1.031		42	100.	35 1/2	7	4	....	....	....	*1.032
25	A.M.	32	100.6	33	9	4	1oz.	lb. oz. 26 11	1355	22	100.4	32 1/2	7	4	1oz.	lb. oz. 24 12	1225
	N.	48	99.8	43	9	4	....	26 11		48	99.6	26	7	4	....	....	....	24 12
	P.M.	42	99.4	37	9	4	....	....		42	100.4	34	7	4	....	....	....	....
26	A.M.	35	101.	0	10	4	1oz.	34 3	1350	35	100.6	26 1/2	8	4	1oz.	29 1	1225
	N.	48	100.6	45 1/2	10	4	....	*1.041		48	100.8	38	8	4	....	....	....	*1.037
	P.M.	46	100.6	33 1/2	10	4	....	*1.041		46	100.4	34 1/2	9	4	....	....	....	29 1
27	A.M.	30	101.	34 1/2	10	4	1oz.	35 2	1345	30	100.4	28	9	4	1oz.	36 8	1228
	N.	50	100.	31	10	4	....	*1.041		50	99.8	20	9	4	....	....	....	*1.032
	P.M.	48	100.4	52 1/2	10	4	....	*1.041		48	100.6	34	0	4	....	....	....	36 8
28	A.M.	39	100.4	12	10	4	1oz.	36 1/2	1358	39	100.6	19 1/2	8	4	1oz.	36 8	1225
	N.	58	100.4	34 1/2	10	4	....	*1.050		58	100.	27	6	4	....	....	....	*1.032
	P.M.	57	101.	56 1/2	10	4	....	*1.050		57	100.4	35	7	4	....	....	....	36 8
29	A.M.	53	100.6	0	10	4	1oz.	34 3	1360	53	100.8	28	7	4	1oz.	39 1	1250
	N.	51	100.2	40 1/2	10	4	....	*1.041		51	100.4	18	7	4	....	....	....	*1.075
	P.M.	49	101.	42 1/2	10	4	....	*1.041		49	100.2	35 1/2	7	4	....	....	....	*1.041
30	A.M.	48	100.4	0	10	4	35 8	1362	48	100.4	11	7	4	39 2	1258
	N.	52	101.	35	10	4	....	*1.043		52	100.4	25	7	4	....	....	....	*1.041
	P.M.	41	101.8	69	10	4	....	*1.043		41	100.6	44 1/2	7	4	....	....	....	39 2
Oct. 1	A.M.	51	100.6	6	9	4	1oz.	98.8	14 1/2	7	4	1oz.
	N.	51	100.8	27	9	4	....	....		....	100.	0	7	4	....	....	....	....
	P.M.	47	101.	47	9	4	....	....		....	100.4	36	7	4	....	....	....	....
2	A.M.	37	100.4	0	9	4	1oz.	5	1362	100.2	23	7	4	1oz.	1252
	N.	39	100.8	14	9	4	....	*1.035		....	100.4	0	7	4	....	....	....	....
	P.M.	43	100.4	28	9	4	....	*1.035		....	101.	45 1/2	7	4	....	....	....	....
3	A.M.	40	100.4	25	9	4	1oz.	15 11	1364	101.	25	7	4	1oz.	14 10 4 1/2	1252
	N.	57	100.4	2	9	4	....	*1.049		....	101.	10	7	4	....	....	....	*1.051
	P.M.	52	100.6	52 1/2	9	4	....	*1.049		....	100.6	42	7	4	....	....	....	14 10 4 1/2
4	A.M.	44	101.	32	9	4	1oz.	14	1358	1006.	15	7	4	1oz.	14 10	1245
	N.	54	100.2	0	9	4	....	*1.041		....	100.4	9 1/2	7	4	....	....	....	*1.045
	P.M.	52	100.4	49	9	4	....	....		....	100.6	47	7	4	....	....	....	....

* Specific gravity.

NOTE.—Both horses were changed from millet to hay the evening of October 1st. On the 27th of September, Harry passed urine 27 times, exhibiting considerable pain. Jim had two attacks of colic, September 23d and 27th. From the 23d to the 27th Jim moved about with a straddling gait when first moved. During the whole trial both horses were either driven or ridden for exercise. The distance was from 8 to 12 miles a day.

During the winter we shall continue our experiments in that line, using millet which is all headed for one lot, another lot partially matured, and a third lot ready for seed. We shall also feed seed as a grain feed instead of oats. Another line of experiment will be for the purpose of determining whether poorly gathered millet produces a more aggravated form of the disease than when it is gathered in good condition. We have found that millet is a very hard crop to secure in excellent condition. It readily moulds if there is much moisture during the process of curing. Should a rain set in at that time, and continue for a day or two, the millet invariably moulds to a greater or less extent. In fact it is practically impossible to secure it so that the dust does not rise from it when it is shaken.

The chemical analyses were kindly made for me by Prof. Ladd and his assistant Mr. Whalen. They were conducted with a view of only determining the amount of nitrogen in each sample, and the amount of dry matter and ash.

PERIODIC OPHTHALMIA.

A NEW METHOD OF TREATING BY SURGICAL INTERFERENCE (PARACENTESIS OF THE CORNEA) ILLUSTRATED BY CASES.

By R. H. HARRISON, D.V.S., Atchison, Kansas.

A Paper read before the First Veterinary Congress of America (U. S. V. M. A.)

Every surgeon in the East who has to do with animals brought to him for examination for soundness, is often very much annoyed, after giving a certificate of soundness, to have the animal brought back to him later affected in one or both eyes with ophthalmia; also the treatment in these cases is unsatisfactory, for while the eye can be cleared up and brought apparently to a normal condition, the conscientious surgeon is obliged to tell the owner that the trouble is likely to recur and eventually end in blindness from cataract.

The treatment recommended in the old, as well as the new text-books, has been carefully tried, and such meagre results

obtained that I have been experimenting, and after treating over a hundred cases have found a method of treatment which is at least far more satisfactory in its results than the method laid down in the different text-books.

The different methods of treating the human eye and that of the horse are not comparative; for the veterinary surgeon who has studied and dissected minutely the eye of both animals (human and equine) will observe great differences between them in a normal state—while again the habit and conditions of both animals is widely different.

These experiments have extended over a period of eight years, during my practice in Boston and the West, and over one hundred animals, horses and mules, have been operated upon, and the results will be given.

Care should be used in every case that the conjunctival sac and the cornea be thoroughly examined, for although the membrana nictitans is very useful in removing foreign bodies from the cornea, bringing them toward the internal canthus so they may be washed away by the tears, sometimes the foreign body becomes imbedded in the cornea and the membrane cannot remove it, and straightway you have an inflammation of the cornea involving the iris and adjacent tissues. In horses' eyes, which are as a rule brown, a magnifying lens is of much service in detecting foreign bodies.

Tension of the Eye-Ball.—This is a useful and important guide in determining whether to operate or not, and in testing the eye I have found the most practical way is to exert alternating pressure of two fingers placed on the upper lid, testing both eyes at once, using the index and middle fingers of both hands on the eyes. In this way a slight variation of the tension of the two eyes can be detected, and if found harder than normal, the operation is indicated; but if softer, most emphatically contra-indicated, for surgical interference means an early and incurable blindness.

It is a mistake to use the solution of atropia too long after the eye has been operated upon, as it causes too much photophobia, especially if the animal has to be worked during the day.

It is well to remember that when one eye is affected with the disease, that, as a rule, the other will become affected sooner or later. This should be especially remembered, for when you have one eye cleaned up and apparently sound, a month or two later you are called to treat the other eye, affected more or less severely, either from sympathy, direct nerve influence, or by infection.

The effects of cocaine appear to be especially beneficial in this operation. It renders the cornea and the mucous membrane of the conjunctival sac and membrana nictitans non-sensitive to pressure, touch of the fingers or speculum. A great advantage from its use is its action on the small capillaries; they become for a time contracted, and the operation is nearly bloodless. It also renders the use of fixation forceps unnecessary, as the eye-ball can be moved in any direction, or to any position. A solution of cocaine—five per cent.—is most advantageous; discs of gelatine with cocaine are not satisfactory.

The antiseptic solution to be preferred is boric acid, especially in treating the eye, as the bicloride of mercury causes the cornea to become too dry. By its continued use, the epithelial layer is lifted up as a vesicle, and extensive and obstinate opacities may be formed.

In using ointments or powder containing mercury the administration of iodide of potassium internally is to be avoided, as this reaches eventually the tear fluid and the secretions of the conjunctiva, and changes it into the bin-iodide of mercury, which is very irritating and painful to the eye. Also calomel, if allowed to remain in the eye in too great quantities during the night, would be changed into the bichloride of mercury and act as a caustic, and might cause deep burns, followed by extensive sloughs of the conjunctiva, especially of the lower lid.

Cleanliness is very important before, during, and after the operation. Sponges are to be avoided, and absorbent cotton substituted. Instruments are best disinfected by the heat and flare of an alcohol lamp. One of the best and cheapest antiseptic solutions to be used in washing away discharges

is chloride of sodium—teaspoonful to a pint of water; it supplies a collyrium nearest in value to the natural secretions of the eye.

If possible, I always advise an animal to be taken from work, and placed in a well ventilated stall, darkened in front and fed moderate rations of oats and hay, or if in season green meat. Corn is to be avoided. If exercise seems to be necessary have it done after sunset, or on cloudy days. Excessive work, and both trotting and running should be limited.

The collyria used with the greatest advantage and success are: Atropia solution, four grains to an ounce of distilled water; cocaine five per cent. solution of the hydro chlorate; astringent collyrium.

- ℞ P. zinc sulph., gr. iii,
Aq. lauro cæasi, Aq. distillatæ, aa ℥ iii,
Met. ft. col., mercurial collyrium.
- ℞ Ung. hydrag. sub. nit., gr. xxx,
Al. amygdalæ, ℥ ii,
Met. ft. col.

The most convenient method of applying collyria to the eye is by the Barnes Eye Dropper, or by a bit of absorbent cotton on the end of a match or toothpick.

Especially in simple or complicated ophthalmia, bandages, ice bags, nitrate of silver, sulphate of copper, local phlebotomy from the lachrymal vein are to be avoided, as they are too irritating and too severe in inexperienced hands. Also the application of urine, and infusion of tea leaves; these only complicate matters.

The use of the ophthalmoscope is useful in making a diagnosis, also in ascertaining the condition of the lens after the operation has been performed, and the eye cleaned up. The normal reflex seems to be restored, although spots or specks are sometimes discerned on the anterior face of the lens, which, if another attack does not take place, apparently remains in *status quo*, and, as far as I have observed, rarely interfere with sight, except when large; then they may make the animal shy, especially at reflected light from different objects.

I might note here that the healthy eye should be examined and studied first so that the normal appearance may be recognized as well as its differences in disease.

Method of Operation.—The patient is prepared by diet, quiet and darkness immediately. Collyria of atropia used morning and night in both eyes, to properly dilate the pupil, and prevent a hernia of the iris. If much photophobia is present col. of boracic acid or chloride of sodium is used, together with a two per cent. solution of cocaine. If much opacity and a tendency to ulceration of the cornea, the col. of mercury is indicated. Continue this treatment for thirty-six to forty-eight hours, then confine your animal for operation, using a twitch, while an assistant holds the ear with one hand and the nose above the false nostril with the other; make application of the five per cent. solution of cocaine to both eyes, by means of absorbent cotton, taking pains to render insensible the entire lacrymal sac, and especially the membrana nictitans. This generally requires from five to ten minutes. When the eye is insensible to the touch of the fingers, the self-retaining eye speculum is introduced, and with the narrow cataract knife of Von Græfs, modified by having it only half the usual length of the blade, an incision is made at the lower margin of the cornea and sclerotic, midway between the external and internal canthus. This operation can be expedited by slight pressure on the cornea (previously oiled with almond oil); by allowing the point of the knife to remain in the wound the aqueous humor will escape. I allow enough to come out so that the cornea has a flattened appearance. Care must be exercised that the flow of aqueous is very gradual or the lens might be torn from its attachments and the iris also involved. The other eye is operated upon in the same manner only less aqueous is allowed to flow out. This operation on an apparently sound eye, at the same time the operation is performed on a diseased one, seems to be indicated by experience, for when only one eye is treated, the other sooner or later becomes involved.

The after-treatment consists in the same rest, quiet and shade, together with an application of the atropia solution

every second or third day, not oftener, or the animal will suffer; together with applications twice a day of the mercurial col. until the opacity is removed. The salt and water solution is to be used daily to remove discharge, and also allowed to run into the conjunctival sac. In operating, care must be used in making the puncture, as a large opening may result in a disastrous fistula; also in the directing of the knife in puncturing, use care so as not to wound the iris. This can easily be avoided by not entering the anterior chamber too deeply, and by directing the knife in the direction of the centre of the cornea. Complications may ensue of hernia of the iris, ulcer of the cornea, or anterior synechia, together with fistula, and escape of the lens and vitreous already mentioned; these, however, can be avoided by care and cleanliness, and judgment in operating.

In the following cases, I have arranged them according to time operated upon:

1886 to 1890.

Animal.	Age.	No. op.	Times affected as known.	Result as known.
1, b. m.	6	1	Once.	Good.
2, b. m.	5	1	"	"
3, b. g.	8	1	Three years.	Fair.
4, g. g.	8	1	Two years.	Good.
5, r. g.	6	1	One year.	"
6, r. g.	6	1	Once.	"
7, bk. g.	7	2	"	"
8, r. m.	10	3	"	Bad.
9, g. m.	3	1	"	Good.
10, g. m.	7	1	"	"
11, b. s.	4	1	"	"
12, b. f.	2	1	From birth.	Bad.
13, g. f.	3	1	Once.	Good.
14, bk. f.	4	1	"	"
15, r. f.	2	1	"	"
16, r. s.	6	1	Four.	Bad.
17, br. m.	10	2	Once.	Good.

1891.

1, g. g.	5	1	Once.	Good.
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2, bk. s.	12	1	Once.	Good.
3, c. m.	5	1	"	"
4, br. g.	5	1	"	"
5, g. g.	7	2	Every year.	Improvement.
6, g. g.	7	3	"	Bad.
7, bk. g.	9	1	Once.	Good.
8, g. s.	4	1	Two years.	"
9, g. g.	3	1	Once.	"
10, b. g.	4	1	"	"
11, bk. g.	10	1	Three times yearly, 4 yrs.	Bad. Shies.
12, g. g.	7	1	Once.	Good.
13, b. g.	5	1	"	"
14, g. g.	6	1	"	"
15, mule,	3	2	"	"
16, b. m.	8	2	"	"
17, mule,	4	1	Twice.	"
18, mule,	5	1	Three times yearly, 2 yrs.	Bad.
19, r. m.	7	1	Once.	Good.
20, b. m.	8	1	"	"
21, mule, aged.	2		Every other month 1 yr.	Improved. Fair.
22, b. g.	"	1	Four times, one year.	" "
23, br. g.	7	1	Once.	Good.
24, r. g.	6	1	Twice.	"
25, r. m.	6	1	Once.	"
26, bk. g.	5	1	"	"

1892.

1, jack,	4	1	Once.	Good.
2, b. g.	8	1	"	"
3, br. g.	9	2	Two years.	Improvement.
4, pd. g.	8	1	Once.	Good.
5, mule.	4	2	"	"
6, mule,	5	1	"	"
7, b. g.	6	1	Three times, 1 year.	"
8, c. g.	5	1	Once,	"
9, g. m.	8	2	"	"
10, bk. g.	3	1	"	"
11, b. g.	4	1	"	"
12, b. m.	4	1	"	"
13, bk. s.	10	3	Four years.	Bad. No more attacks, cataracts both eyes.

14, bk. g.	3	1	Once.	Good.
15, r. m.	5	1	"	"
16, r. g.	7	1	"	"
17, r. g.	9	1	"	"
18, mule,	4	2	Two years.	Improvement.
19, jennet,	8	1	Once.	Good.
20, b. g. Aged.		1	"	"
21, r. m.	"	1	"	"
22, b. g.	"	1	"	"
23, r. s.	"	2	Three years.	Bad.
24, g. s.	4	2	Two years.	"
25, r. m.	5	1	Once.	Good.
26, jack.	4	2	"	"
27, b. g.	7	1	"	"
28, b. g.	12	1	One year.	"

1893.

1, b. g.	6	1	Once.	Good.
2, b. g.	7	1	"	"
3, c. m.	6	1	"	"
4, c. g.	5	1	"	"
5, mule,	4	1	"	"
6, b. s.	8	1	"	"
7, br. g. Aged.		2	Four years.	Bad.
8, br. m.	7	1	Once.	Good.
9, b. s.	8	2	Five years.	Bad.
10, b. m.	4	1	Once.	Good.
11, g. m.	6	1	"	"
12, b. f.	2	1	"	"
13, b. c.	1	1	"	"
14, g. c.	2	1	"	"
15, br. g.	4	1	"	"
16, bk. m.	7	2	Two years.	Bad.
17, mule,	5	1	Once.	Good.
18, mule,	5	1	"	"
19, r. m.	4	1	"	"
20, Shetland,	3	1	"	"
21, b. g.	5	1	"	"
22, c. g.	4	1	"	"
23, c. m.	6	1	"	"

24, c.
25, r.
26, r.
27, r.
28, b.
29, r.

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24, c. m.	8	2	Four years.	Improvement.
25, r. s.	Aged.	2	Once.	Good.
26, r. g.	"	3	Five years.	Bad.
27, r. c.	3	1	Once.	Good.
28, br. g.	5	1	"	"
29, r. m.	Aged.	2	Four years.	Bad.

Resume.—These cases, of which eighty per cent. have done well, ten per cent. an improvement and ten per cent. badly, have extended over a period of nearly eight years. It should be borne in mind that the changeable nature of horseflesh in regard to barter, should always be considered in giving statistics in the results of operations, and a surgeon's success may be limited to his knowledge as to the history of the case, as long as he can keep track of it. I would state that especially in the last three years, in nearly every instance the case has been followed up as closely as possible, which has been much more easily done here, where horseflesh does not change hands so often as it does in the East. There has been within the last two years twenty-five animals that I have lost track of, as they were shipped either to the Kansas City, St. Louis or Buffalo markets. These I have not entered in the list.

ASTHMA AND PULMONARY EMPHYSEMA.

By R. B. PLAGEMAN, D.V.S.

The word asthma is commonly used as synonymous with dyspnœa, or difficult breathing. Here is at once a great practical difference from the dyspnœa of pleurisy, of pneumonia, of the diseases of the heart. The dyspnœa of pulmonary emphysema is made with a double expiratory movement, and not accompanied with any wheeze.

Seeing how violently all the muscles of inspiration and expiration partake in the struggle of a severe paroxysm in heaves, we cannot but wonder much at the notions of the older writers, that the disease depended on an excessive and convulsive action of all these muscles.

I think the true pathology of pulmonary emphysema may be traced to asthma, which is a spasmodic contraction of the bronchial tubes, which so much impedes the ingress and egress of air in respiratory forces to effect it. I am aware that many will be opposed to the daring assertion that the bronchial tubes do really possess muscularity and are not merely elastic tubes, and are the seat of spasmodic contraction, experiments having shown that under the influence of a galvanic or chemical stimulus the circular fibres of the bronchi contract readily but slowly; this contractibility extends only to the large bronchi, the finer ones have no peristaltic or vermicular motion, and the expulsion of mucous and other fluids from the bronchial tree, besides the ciliary motion, is the increasing velocity with which the air in expiration passes from the pulmonary cells to the narrow converging bronchi.

The air in entering the lungs passes with decreasing velocity as it spreads out in the minute tubes and cells, the combined area of which greatly exceeds that of the larger branches. In expiration this is reversed, the motion is more rapid and forcible as it converges towards the trachea and glottis, when the process is brought to its consummation in special efforts at coughing.

The subject of this paper was a little pony suffering from chronic emphysema of the lungs in a very aggravated form and recommended to be destroyed by several veterinary surgeons. I asked the owner to send me the pony for experimental purposes, in the course of which experiments I discovered that bronchial contractibility was influenced differently by various medicinal agents.

Thus hydrocyanic acid did not impair it at all, opium and morphia very little, aconite a little more, but belladonna almost destroyed it.

To return to emphysema of the lungs, it is a result of spasmodic asthma, which there is no reason to doubt is due to a tonic spasm of the muscular fibres of the bronchi and construction of these tubes, and this spasm is due to reflex action of the nervous system; for instance, irritation of the stomach by coarse and indigestible food, and we all know

that proper diet plays an important role in the treatment of this disease. Asthma may originate from a cold or from inhaling irritating matter, certain effluvia, etc., or from indigestion.

We have in human patients a kind known as "Hay Asthma," which is claimed to be excited by pollen-germs, or some effluvium from flowering grass; this is more catarrhal in form.

The pony, a mare, was sent to me June 13th. I commenced my treatment with subcutaneous injections of sulphatrophine on the track of the pneumogastric on a level with the thyroid cartilage in one-eighth grain doses twice a day, increasing it on the fourth day to one-fourth grain; pupils greatly dilated, mouth very dry, salivary secretion almost stopped, thirst reduced to a minimum, abdominal respiration greatly diminished; so then against the bronchial spasm we have a pretty good remedy, and with the theory of a thickening of the bronchial tubes in view, I commenced the administration of drachm doses each of iodide of potass. and bicarb. potash twice daily, continued for ten days, when symptoms of iodism began to develop, viz., conjunctivitis and discharge from the nostrils, swelling of the extremities, and a tendency for tail and mane to become loose.

On the 28th I substituted for the bicarbonate of potash bromide of potash for three days, and then stopped all medicine, as I deemed the animal sufficiently under the influence of iodine.

July 8th to the 12th gave only stramonium leaves in two drachm doses; the results so far exceeded all my expectations, and I believe that I speak within bounds when I say that with a combination of this kind spasmodic asthma can be cured, that is when there is merely a thickening of the bronchi without an extended pulmonary emphysema.

The efficacy of the alkaline iodide probably depends on its eliminative and deobstruent action increasing the secretion of the kidneys and the bronchial membrane, and promoting the absorption and dispersion of the thickenings and deposit in the tubes, bronchial glands and at the roof of the lungs.

GASTRO-HYSTEROTOMY.

By DR. H. A. SPENCER, San Jose, Cal.

(A paper read before the California Veterinary Medical Association).

It is always gratifying to a practitioner to have something a little out of the ordinary to relate; more especially is this true if in his efforts to do something for the suffering animal creation he has the good fortune to be successful, as your humble servant was recently in the performance of the operation of gastro-hysterotomy on a bitch. I have long entertained the opinion that the veterinary, like the medical profession, were deterred from the performance of what is known as capital operations. Not so much from lack of confidence in their own skill, but from fear of the thoughtless arraignment by a class of people who infest every community, and with pseudo wisdom dilate on the enormities of what they are pleased to term the butchery of a surgeon, who has brains enough to determine on a course of procedure and courage sufficient to put into practice what the dictates of his convictions tell him is right; and I am satisfied that many citizens are cut off annually from lives of usefulness when by intelligent surgical interference they might have been spared to their families and friends were it not for fear of the insatiate, nonsensical tongue-waggle of this gossiping element of society, who are never so happy as when engaged in impugning the motives or belittling the services of those who are unfortunate enough to attract their attention. While it would seem that these observations relate to the tribulations of the human physician, we find that the veterinarian also comes in for no small amount of abuse; in fact I am of the opinion he receives the most, for there are certain social distinctions between the two professions that are sufficiently awe-inspiring to this class of people to make them cautious in spreading their slanders against the medical man. In the practice of our profession we find that though it is often necessary that the patient be prepared, or put in the best possible condition to withstand the shock of an operation, he is not the only one

we must prepare. The owner must likewise be conditioned, and this latter not only requires a large amount of tact and a keen appreciation of human nature, coupled with patience, or faith in our efforts to restore to usefulness a maimed, useless animal. We are apt to realize, when too late, no matter how intelligently we have studied the case, nor how much skill we may have evidenced in our operation, the only balm that can assuage the owner's grief is a plaster of gold notes. But once having a thorough understanding of what the responsibilities consist of, who is to assume them and under what condition? It is our duty to spare no pains to preserve life and to restore to value the patient.

Gastro-hysterotomy, or the *cæsarean* operation, seems to have been practiced as a *dernier resort* as early as the sixteenth century, and indeed earlier, for history relates that Numa Pompilius decreed that every pregnant woman that died should be opened, and the Senate of Venice enacted that practitioners should perform the operation on pregnant women as soon as they expired. The king of Sicily also decreed that the death punishment should be visited on any medical man who omitted or refused the operation to any woman dying in advanced pregnancy. In 1581, Francis Rousset, a surgeon in Paris, published a treatise in which he brought numerous people of the possibility of safely performing the *cæsarean* operation on the living mother, and it was he who first gave it its present name. After this publication the operation was frequently performed on the living subject, both in and out of France, and history informs us not infrequently when it was entirely unnecessary. An instance is cited of a sow-gilder operating successfully on his wife; also of an illiterate Irish midwife, Mary Donally, who with a razor operated on a poor farmer's wife in June, 1738, and removed a dead child. Her patient completely recovered, and was able to walk a mile on the twenty-seventh day after. Nay, a negress in Jamaica cut herself open with a butcher knife, removed her infant, and recovered.

In Longshore's "Obstetrics" we find several instances of the same woman submitting to the operation two and three

times. One case, reported by Rigby, was first operated on in June, 1826, in her twenty-ninth year; again in January, 1831; and yet in June, 1836, Prof. W. Gibson, of Philadelphia, operated twice on the same lady; the first time with a daughter, whom they named Mary Cæsarean, and the second time a son, who was called Cæsar Augustus. These children the professor took great pride in exhibiting to his classes at the University of Pennsylvania. On May 12th of this year, I was consulted by Mr. Charles Hughes, of Mayfield, Santa Clara County, with reference to a skye terrier bitch that he brought eighteen miles, ensconced in a basket of feather pillows. She was eight years old, very fat, and heavy in pup; in fact, had passed term, and been in labor thirty-six hours, but nature had failed to relieve her, though if we except the obesity there was no apparent reason therefor. Her throes were very infrequent and lacked energy; repeated doses of ergot failed to augment or accelerate them. I then made a fruitless endeavor by manual manipulation to make a delivery, but at the expiration of an hour resorted to instruments. Not being able to procure a pair of bitch forceps, I had recourse to a pair of large splinter forceps, and delivered her of a live puppy, breach presentation. After waiting without avail for some time I attempted the second, but succeeded only after mutilating it, until we were obliged to destroy it; a third one resisted all my efforts, so with the owner's consent I summoned Dr. Roland A. Lord to my assistance, who with persistency and rare intelligence labored for above an hour, when we suspended operations on account of inability to accomplish anything, and the patient's exhaustion. After consultation, informed Mr. Hughes that we could do nothing more in that direction, and could suggest nothing but the cæsarean section, advising him of the fatal probabilities attending the operation. But he apprised us of his knowledge of the matter, saying he had recently had some experience in a case of ovariectomy in the human family, and had also witnessed the operation of hysterotomy in the bitch at Alfort Veterinary College, and while fully alive to the danger and magnitude of it, requested that we go ahead, as he was very

anxious to save her if possible. With this understanding, we procured a table over which was spread a clean rubber cover thoroughly scrubbed with soap and water and rinsed with a solution of bichloride of mercury; above the table was suspended a large fountain syringe, filled with a solution of creolin and provided with a fine spray. A porcelain dish containing the necessary instruments was filled with the same fluid; another was provided for submerging sponges in a solution of bichloride; the patient was then shaved over the region of the flank after which the locality was scrubbed and rinsed with bichloride 1 to 1,000. Bichloride gauze and bandages were wrapped up in a clean towel and placed in a convenient position; and lastly, our hands were very thoroughly washed in hot water and soap, rinsed with creolin. The patient placed upon the table, Dr. Lord administered the anesthesia, which in this instance was chloroform until anesthesia was apparent, when ether was substituted. I then made a free incision through the skin, commencing an inch below and about the same distance anterior to the point of the ilium, and running obliquely down and forward, exposing the muscles, which were divided in like manner as nearly as possible with their fiber; the peritoneum was then divided by the fingers; the gravid uterus was easily found and drawn through the opening as far as the attachments would permit, so that none of its contents could spill into and contaminate the wound. A clean towel wrung out of creolin solution was spread between the skin and the uterus, which was then incised longitudinally, and its contents, two puppies and placental membranes, together with a quantity of fluid, carefully removed, after which the uterus was thoroughly cleansed with a weak solution of carbolic acid, and sprayed for several seconds with peroxide of hydrogen. I have neglected to state that our creolin spray was continually kept on and about the wound during the whole procedure, and the instruments were religiously cleaned as used, and returned to the pan of antiseptic fluid. The uterus was then closed with interrupted sutures of carbolized catgut, and returned to its place; the muscles were also sutured, and the ends left long enough to

be brought through the incision in the skin for drainage. The skin was then stitched in like manner, the spray removed, wound dried, and spread over with an abundance of dry boracic acid, and covered with a large wad of bichloride gauze and then a piece of absorbent cotton, and, lastly, several wraps of wide bandage to keep the dressing in place. The anesthetic was removed, and a few whiffs of ammonia given, when she slowly revived, quite weak. A small dose of ammonia aromatica was given when she vomited, after which she retained a little diluted brandy, and manifested longing for her puppy, which we placed by her in the basket. Distributing bottles of hot water around her, the owner placed the basket in his cart and started home, stopping at all available places to replenish the hot water supply. The treatment advised was tinct. arnica in drachm doses every four hours, which was persisted in until she was out of danger. Her *regimen* was milk and lime water until the fifth day, when she was permitted to lap a little bouillon.

The second day the owner telephoned for permission to apply ice poultices over the bandages, which we assented to. This he continued night and day for four days, when his curiosity got the best of him, and he removed the dressings; and with the exception of some considerable serum on the gauze, the wound was clean and healthy, and six of the stitches had healed. Not being prepared to dress the wound as we had done, Mr. Hughes contented himself with keeping it clean and spraying with peroxide of hydrogen three times daily. Eighteen days later he brought the bitch to San Jose, and the wound was completely healed; she was as playful as a puppy.

While gratified with the result of the operation, I am fully aware that much of the success was due to the careful and intelligent nursing she received. I might have attributed the favorable termination to good fortune had I not operated on a very large ventral hernia in a three-year-old colt, following the same antiseptic precautions, with most flattering results. I have also recently witnessed an operation of ovariectomy in the mare, performed on the same lines, with the same good luck.

OMPHALO-PHLEBITIS.**BY DR. LEE HOOVER, V.S.**

(Paper read before the Indiana Association of Veterinary Graduates at New Castle, Ind., Aug. 21, 1893).

Omphalo-phlebitis is a functional disease of young animals, occurring soon after birth, and has for a long time been recorded in districts where breeding has been largely carried on, the animals affected belonging to the equine, bovine and ovine species, dogs and pigs being occasionally affected. I shall confine my remarks to the disease as found in foals.

In some years it prevails very extensively, and appears in some regions to be almost enzootic. By some authorities it is supposed to be a constitutional disease, by others as scrofulous in its nature, while others again consider it as essentially pyæmic. But when we take into consideration the anatomy of the omphalo-mesenteric vessels and the urachus, especially the former, connected as it is with the very life of the young animal, and the filth which usually surrounds it immediately after birth, it is surprising that more foals are not affected with this disease.

There may or may not be a persistence of the urachus; but omphalo-phlebitis nearly always follows this disorder, more especially if it is allowed to continue any length of time. Neither sex, color nor breed seem to have anything to do with the contracting of this disease.

CAUSES.

Though great diversity of opinion exists as to the etiology of this disease of young animals, all agree that the predisposing cause is the period of youth, as it appears only during lactation. This fact disposes of its constitutional or hereditary nature, and has inclined some pathologists to attribute its cause to an alteration in the composition of the milk of its mother. Bollinger, whose scientific and most valuable researches in comparative pathology entitle his opinions to the greatest consideration, entertains different views as to the origin of this malady. He contests the influence of food in the

production of the disease, as the strong no less than the weak animals are attacked, and are just as liable to succumb, and it appears when every kind of diet is given to the dam. He also denies that it is produced by chills, but attributes its occurrence to pyæmic or septic infection. A great amount of care is betowed on the newly-born infant, and scrupulous attention is paid to the severing and bandaging of the umbilical cord immediately after birth; while the foal has to lie with an open wound in all kinds of filth, and is thus exposed in the readiest manner to inoculation with poisonous or injurious matter, which cannot always be excluded even from stables built expressly for breeding purposes, and kept scrupulously clean.

If the navel wound of the infant were exposed to the filth which young foals have to lie in, it would be quite as liable to contract blood poisoning as are our four-footed animals; and just so long as breeders ignore the prophylactic treatment of this disease, just so long will their annual losses be greater from the ravages of this disease. The prognosis is very unfavorable. There is a greater fatality among foals from the effects of omphalo-phlebitis than from all other diseases. Often on a foal otherwise recovering from an attack of this disease, we find an anchylosis of one or more joints, necessitating the destruction of an otherwise valuable animal.

It is not essentially due to a specific bacteria, but may be and often is caused by the products of decomposition of nitrogenous matter, without the presence of living micro-organisms.

The umbilicus being raw, and but lately the entrance of the life-giving substance into the body, absorbs the septic poisoning directly into the system, and after three to ten days the colt will be found to be very lame in one or more limbs, usually only one hind limb being affected at first, this usually being the only premonitory symptom, the owner declaring that nothing ailed the colt except that the mare had stepped on one of its legs.

Around the epiphysis of the bones, and consequently near the articulation, there is swelling not only of the proper tissue of the joint, but also of the surrounding connective tissue, with hot œdematous infiltration of the region, causing intense

pain. From the commencement the symptoms are very acute, and are rendered more marked by the least movement.

The progress of the disease is sometimes very rapid, death occurring in two to four days after the first symptoms are noticed. This, however, is not the usual course, the patient may live three or four weeks, or even longer; the average duration is about fifteen days.

Suppuration soon manifests itself, which soon becomes general; numerous abscesses form in different parts of the body, and around the joints, whose capsules contain pus as well as purulent deposits, which is exuded in large quantities.

As complications we may have pleurisy, pericarditis, pneumonia and the usual complications of pyæmia; it is seldom that the disease assumes a chronic form.

In fatal cases the patient soon becomes emaciated, the hair is harsh and dead, sometimes there is a nasal discharge with foetid diarrhoea, but we usually find an obstinate constipation.

The foal does not suck as much as usual, and if lively at the commencement of the disease, soon becomes prostrated and extremely weak, and will have to be aided to rise. The temperature which has been 102 to 103° runs as high as 106°. From the closest examination of the pathological anatomy, there can scarcely be a doubt as to the septic or pyæmic origin of the disease.

If the disease has existed for any length of time a serous exudate will be found under the skin and in the various cavities of the body. There will also be found numerous pyæmic abscesses in various parts of the body. The liver is found enlarged and full of minute abscesses, all of the organs of the body being more or less affected. If the disease is of long duration the muscles waste, thus causing the affected joint to appear larger than it really is.

TREATMENT.

As has already been said, curative treatment, even when taken at the very commencement, and under the most favorable circumstances, is often very unsatisfactory. Only by prompt and vigorous prophylactic treatment can we hope to

successfully cope with this disease. The best preventive treatment is to have the mare to foal in a clean pasture, entirely away from old straw-stacks and filthy manure heaps. But as this is not always practicable, the umbilical cord should be ligated near the body and severed a half inch from the ligature; this should be done as soon after birth as possible. Apply a dressing of iodoform and powdered boracic acid, equal parts; over this apply surgical collodion until a thick coating has formed; if this has been properly done no further trouble need be feared.

But when the young animal has contracted the disease, medicines that tend to counteract the poison must be given: As salicylic acid is unrivalled for its antiseptic and antipyretic properties, especially in inflammation of the fibro-serous membranes, its internal administration should be kept up until the physiological effect of the drug is obtained. Salicylate of soda is, perhaps, the best form in which to use it; this should be alternated with other antiseptic remedies, as preparations of carbolic acid, sulphate and hyposulphate of soda, etc.

If the patient becomes weak diffusible stimulants should be administered every two hours. Sulphate of magnesia or aloes (socratrini is best for foals) should be given as needed to overcome all constipation.

Abscesses which form around the joints should be allowed to burst open themselves; others should be lanced as soon as possible, and syringed out with some antiseptic agent, as peroxide of hydrogen, solution of permanganate of potassium, carbolic acid solution, etc.; poultices are of doubtful utility. An anodyne lotion composed of tincture of arnica, distilled extract of hamamelis and tincture of opii is excellent to allay the pain and irritative fever. A cooling lotion is made of muriate of ammonia and nitrate of potassium $\frac{3}{4}$ i of each to the pint of water, applied twice a day, then bandaging the inflamed joints moderately tight.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."—VETERINARY RECORD.

BROKEN NECK IN A MARE ENDING DIRECTLY IN RECOVERY
AND INDIRECTLY IN DEATH.

By GEORGE N. KINNELL, M.R.C.V.S., Pittsfield, Mass.

The subject of this communication was a valuable trotting bred mare, and at the time of her accident was kept along with another mare in a paddock which had been specially fenced and arranged for their safety. During a thunderstorm, on the night of the 20th of last June, both mares ran bang head foremost against the fence. One mare had a few slight cuts and scratches about the head, while the subject of this communication appeared to have got off scot free. During the following day, however, she was noticed dull and stupid; and in the evening of the 21st my attention was called to her. Her pulse and temperature did not indicate anything seriously out of the way, but she had a peculiar indescribable look such as we see in a horse a few hours after having had a fit. Her head was carried just a trifle lower than natural, and her neck had an almost imperceptibly flattened look on the top. I was of the opinion she had received an electric shock, prescribed quiet and low diet, meaning to examine her further next morning.

At 5 A.M. on the morning of the 22d, I was called to see her and found a state of things which surprised me. The mare was drenched in sweat, the muscles of her entire body in a state of violent spasm, she was staggering around and across the box-stall, bumping violently against the walls and altogether behaving in a manner which made it highly dangerous to go near her. Her head was twisted to the off side and at the level of the second and third cervical vertebræ, the neck was acutely bent, there being a big bulging elbow on the left side and a corresponding hollow on the right.

I immediately realized I had a very serious spinal lesion to deal with, but whether a fracture or a dislocation I did not know, or for that matter try to determine. For the time being, all my efforts were directed to preventing her injuring herself or the attendants. In a short time she went down, stretched herself out on the ground, and the whole deformity in her neck at once disappeared.

This was enough for me. I felt convinced no cervical dislocation could become reduced like that. I made up my mind nothing short of a broken neck could explain such a train of symptoms, and gave my convictions accordingly. It did not seem possible she could live, but we set to work to do all that lay in our power.

Medical and surgical treatment consisted in giving a purgative ball, followed by three-drachm doses of bromide of potash repeated at intervals of six hours, the application of hot water fomentations to the whole neck, together with the exhibition of enemata and catheterization at regular intervals. Also, once every six hours, the mare was carefully turned from one side to the other, by rolling her over her back, great care being taken to keep the head and neck in the same relative position to each other and to the body. For the next twenty-four hours the mare became more and more quiet and remained in a semi-unconscious condition for the best part of a day.

On Saturday the 24th, however, she began to show decided signs of improvement, bowels operated freely and her appetite was good. For the first week I may say she was not allowed to lift her head from the ground, her nutriment being given by the attendant, a handful at a time, inserted at the side of her mouth. Her drinking water was given in the same way, partly from a sponge, and partly through a rubber tube.

On Tuesday, the 27th, Professor Liautard saw her in consultation with me. We lifted her in slings but she was utterly unable to help herself in any way. By flexing her neck very distinct crepitation could be detected, and the professor fully concurred with me in the diagnosis of a

fractured vertebræ. The following day I encased her whole neck from the shoulders to the ears in a stiff plaster made with a saturated alcoholic solution of gum lac, and strips of cotton cloth.

The rest of the story is dreary enough. She was kept lying on rubber beds inflated with air such as are used in hospitals. Two of these were used. When she had lain long enough on one side, we pushed the other bed close up to her back and rolled her over on that. Also later we had a lattice work made which stood up some little height from the floor and so arranged that we could remove one or more slats from underneath any place from which we wished to remove pressure. This continued between four and five weeks. The mare gradually improved, paralysis slowly disappearing. About this time she was lifted in slings and made very promising attempts at standing up. A few days later she was again lifted in slings and stood up as nice and straight as any horse ever did.

But alas for complications! In spite of all our care, her six weeks' constant lying in bed had caused the development of enormous sores on both hips. She began to show symptoms of blood poisoning, quickly grew worse, and died in septic convulsions at 9 P.M. on the third day of August, just six weeks from the day of the accident.

Post Mortem Revelations.—The second and third cervical vertebræ were both found to be the seats of fractures. The lesions in the vertebræ dentata were as follows: About an inch of the free extremity of the right transverse process was broken off, also there was a large amount of calcareous deposit on the superior spinous process and on the posterior two-thirds of the floor of the spinal canal.

The lesions in the third vertebræ were still more severe. The right anterior articular process was knocked clean off by its neck. There was a large amount of osseous deposit around the seat of this fracture and also posterior to it causing almost complete occlusion of the vertebral foramen. The anterior end of the left transverse process was also broken off, and there was a considerable amount of calcareous

deposit on the convexity of the anterior end of the centrum, although none on the concavity at the posterior end of centrum of dentata. Besides these, there were found five or six small detached pieces of bone, varying in size from a grain of oats to a moderate sized pea. These last must, I think, have been detached by wrenching from the superior spinous process of vertebræ dentata.

Remarks on Case.—This is one of the most unusual cases I have ever met with. I do not think there was any direct injury to the spinal cord itself. The symptoms throughout were those produced by external pressure caused by the hemorrhage and inflammatory swelling resulting from the injury to the bones and soft structures at the seat of the fracture. I never before had occasion to keep an animal lying down for such a prolonged period, and if I had to do it again I would from the first utilize the platform arrangement with removable slats in addition to the air beds. I think by thus removing pressure from the points of the hips, an animal could be kept in the recumbent position for a very prolonged period without the development of very serious bed sores.

So far as the fractures were concerned recovery seemed complete. The mare was not allowed to execute any very extensive movements of her head and neck, but the limited movements she was allowed to make were made with the greatest freedom on her part.

ESOPHAGEAL OBSTRUCTION.

S. R. HOWARD V.S., Hillsboro, Ohio.

During the afternoon of the 19th of September last, I was called to T. McDonald's farm, Willitsville. Early in the morning of the same day a large draft horse became choked while eating oats. Owner promptly attempted to unchoke him, using the butt end of a buggy whip. During the struggle that ensued, the horse bit off and swallowed a piece of the whip about one foot long.

Upon close inspection and manipulation owner discovered the piece had lodged in the œsophagus at entrance of chest. After much delay I was sent for and arrived at five P.M.

I found horse resting easy, and upon examination I could feel about two or three inches of upper end of piece of whip in œsophagus underneath jugular vein and edge of mastoid humeralis muscle.

Threw him with hobbles. I then pushed my cæcum trocar directly down onto the piece of whip in œsophagus and attempted to work it upward toward mouth. This was not as easy as it might seem, owing to the non-resistance the body gave to the shoving of the trocar. After a number of trials the piece began to move. When I could feel the lower end, I used my thumb pushing it up until I could feel it no more, it having disappeared behind trachea.

I then placed a man with his thumb firmly pressing on œsophagus. I then put in the horse's mouth a speculum with bridle. Dilating speculum, I attempted by spells for at least half an hour to get hold of end of stick in œsophagus. This I finally accomplished with my fingers. I then passed probang to stomach, left him and went to supper.

By this time considerable swelling had taken place at seat of puncture of skin by trocar, due to puncture of jugular vein. This swelling was fomented most of the night with warm water. It disappeared in two days.

I advised plenty water and absolutely no feed for twenty-four hours, then soft feed for two days then to be fed as usual. He is well. •

CRIB BITING—CHRONIC ULCERATIVE ENTERITIS.

By R. F. MOORE, Veterinary Student, Bristol, N. H.

I enclose in this package a section of the small intestine taken from a twelve-year-old mare which first came under my father's care three years ago. The first symptoms of anything wrong with the mare were noticed about five years ago when she commenced to crib-bite, which was intermittent with her until death. Three years ago my father was

first called to visit her. She had symptoms of spasmodic colic, and he treated her for it with good results, as the spasms were very severe and lasted for only one hour. During the balance of the year she had five such attacks, but always made a quick recovery. The next year she had these more frequent. The mare was in good flesh and looked healthy until the past spring, when she commenced to lose flesh and grow weak.

My father died in June, and as there was not another veterinary surgeon in this section, I was called to see her. At the time I thought it a case of indigestion and treated her for it, and, for a time, it seemed with good results; but about three weeks later she commenced to refuse her food but would feed well on grass, and continued to grow worse in appearance but had the colicky spells less often.

The owner called in a veterinary surgeon from Boston, Mass., who happened to be in this section, and he prescribed gentian and iron tonic. She continued to go wrong, I was called in the second time two weeks ago. I told the owner that the symptoms were those of an intestinal calculi, that I thought nothing could be done to give permanent relief, and that if she should die during the winter would like him to make an examination and report to me at the college. Yesterday I received a message from him saying that the mare had died that morning, and wished me to come and make the examination. I did so, and found the abdominal cavity filled with a fluid of light red color; the small intestines perforated in two places, and near the colon I found this section which I enclosed in the jar, with three others, one large and the other two somewhat smaller, located about two feet apart. There was an ulcer about four inches wide on the liver, and the liver had a very unhealthy appearance. The other organs seemed to have a healthy appearance.

I thought it an interesting case although a hard one for a junior. As I expect to return to college this week, I thought I would enclose this to you hoping when I see you that you will enlighten me in regard to the case.

EXTRACTS FROM GERMAN JOURNALS.

By RICHARD MIDDLETON, D V.S., Philadelphia, Pa.

MALIGNANT OEDEMA IN THE COW.

Descriptions of this affection, occurring spontaneously, are unusually scarce in our literature ; perhaps, therefore, the following account may not be uninteresting :

This particular animal belonged to a farmer, whose property was situated high above the sea level. On October 29th, the following symptoms suddenly seized the patient : anorexia with considerable swelling, and protrusion of the membrana nictitans. (The owner's wife had cut through the latter with scissors, before our arrival.) The impression made upon examination on the evening of the same day confirmed the history of a very sick patient. Sounds in the posterior body could not be distinguished ; the horns were warm. Inspection of the mouth and œsophagus also yielded negative results.

In the parotid region of the left side a swelling was evident, with no well circumscribed line of demarkation separating it from the adjacent surface ; also upon the same side at the intermaxillary space a fluctuating tumor the size of a billiard ball.

All movement of the jaw was exceedingly painful to the animal. The contour of the inferior maxilla had become lost the following day by a swelling involving the commissure of the lips and chin, which latter offered a wound of little depth and extent, presumably made by a neighboring cow.

On the third day the symptoms were much more violent, and rendered more serious by a dyspnœa due to œdema in the laryngeal region. Food and water were refused ; most of the individual enlargement had become confluent.

Eyelids thickened, ophthalmic bulb protruding ; cornea devoid of lustre, opaque, and corneal reflex absent.

Arnica infusion was prescribed and applied locally, with decoction of flaxseed internally ; the result of the therapy was beneficial only so far as it influenced the fœcal discharges,

making them more fluid. The owner was advised to slaughter the cow in order that the flesh might be of some value, but death, due to the progress of the disease, intervened.

Post Mortem.—Whole left side of neck had become involved in the œdema, which also extended under the sternum. Close to the trachea small collections of ecchymoses were prevalent. The thickness of the infiltrated subcutis indicated one-half to one inch, color of same grass green, having a disgusting odor. There escaped from the trachea a reddish yellow foam containing blood.

Lungs, heart and digestive organs apparently normal. Blood in the cardiac cavity dark, but well coagulated; much fat surrounding the organ. Membrane of the epiglottis hemorrhagic, infiltrated, the whole larynx discolored. Tonsils hypertrophied. The diagnosis was reached without the assistance of the microscope; the preparations from the cornea and œdema itself, together with other parts of the anatomy which had been sent to Copenhagen to be examined, were lost through the mail *en route*.—*Elmenhoff-Danemark*.

OSTEOMALACIA IN CATTLE.

A cow moderately well nourished, exhibited when led an unnatural gait. Examination of the joints and feet resulted negatively, but the manipulation of certain muscles caused the animal to evince pain. Regaining the feet when down was not accomplished without exertion; other symptoms were lacking. Considering the widespread and general drought, and the retarded growth of food grasses, which at this time afflicted the community, we were inclined to believe the trouble referable to some bone disease due to a lack of nutritious elements in the rations.

We stated our opinion to the owner, and by his wish proceeded to treat the patient. Calcium phosphate and bitter tonics were given internally; applications to the limbs were also advised. After three weeks of this regimen ambulation was somewhat less hampered, so that continuous visits were not necessary.

On the 5th of June the owner sent for us to attend the slaughtering of the animal, that we might pass an opinion as to the edibility of the meat. The cow had become loose in some way and had fallen in the yard; failing to rise after assistance had been given, the owner concluded to dispatch the animal.

With the exception of *distoma hepaticum* and *lanceolatum* in the liver, the internal organs showed nothing abnormal; the subcutis at the gluteal region was infiltrated, and the pelvis had been fractured.

The cancellated tissue in the bodies of the *vetebræ* was hyperæmic; the medullary contents of the long bones had become soft, half liquid and dark red in color. Exostosis at the epiphyses of the long bones not present.

The case was diagnosed one of osteomalacia, a disease but seldom met in bovine practice.—*Berliner Th. Woch.*

BRIEF PATHOLOGICAL OBSERVATION.

Vath noticed in January, 1891-1892, nine cases of cerebral apoplexy in cattle. In five of the animals the cause was ascribed to unknown and peculiar circumstances. One patient fell to the ground and could not regain the feet; two which had fallen while at work were, after the lapse of some time, able to return to the stable.

Generally the sick animals manifested nothing noteworthy in the first two days excepting listlessness and anorexia; body temperature not increased, skin and extremities cold, pulse and respiration normal. Digestive process, as indicated by auscultation, interfered with.

From the third or fourth day unsteadiness of gait was noticed; paralysis of the tongue and throat, with later a palsy of the remaining portions of the alimentary canal. The tongue pendant from the commissures of the mouth; patients apparently suffered at times intense hunger, as shown by the greed with which they plunged into the food, but without being able to obtain or masticate the nourishment.

The paralytic condition being a progressive one, the ani-

mals soon became unable to rise from the reclining position. Fever did not at any time appear. All the animals, among which only one cow, were killed on the fourteenth day. All treatment was in vain. Section showed large hemorrhages and apoplectic herds or clots upon the surface of encephalon; also congestion of the larger blood vessels of this organ. The flesh was consumed as food.—*Deutsch. Th. Woch.*

BLOODY URINE.

In the *Österreich Thier. Centralblatt*, district veterinarian Czak has reported the discovery of exuberant growths upon the cystic mucous membrane resembling warts. Binder has communicated similar observations. Among several cattle in one stable the affection was so malignant that in one instance slaughter was advised. The section developed a number of buttons attached by means of pedicles to the membrane; these were especially numerous surrounding the origin of the urethra. They were close upon each other and their parenchyma consisted of easily lacerated vascular tissue. The latter quality accounted for the periodic hemorrhages. These were not true cases of hæmaturia. Arnold has made a like report in *Berliner Woch.*, Jahrgang, 1890, p 85.

EFFECTS OF LIGHTNING.

During a heavy thunder shower a certain stable containing five horses was struck by lightning; when the building was opened all of the animals lay prostrate upon the floor. Two sprang to their feet in three minutes, manifesting giddiness, but soon recovered when led in the open air. The third horse regained volition after ten minutes, but could not be used for two days. The fourth animal moaned continually, now and then showing spasmodic contractions, finally ceasing to respire twelve minutes later; no effect of the electric fluid could be detected upon the body. The fifth patient lay upon the straw quietly, but continued to groan; in an hour this animal stood upon its feet, showing the hair at the apices of the ears to have been singed.

The destructive track of the lightning could be traced from the right ear to the shoulder, and thence to the hoof. This last horse pressed forward upon the right side; the right eye and nostril were much widened; movement of the joints evidently normal; mucous membrane very pale; pulse 100, respiration 40, which symptoms receded after the expiration of twelve hours. At night the patient lay quiet, but the following day uncertainty and weakness of gait characterized the movement. On the second day following a march of eighteen miles was made, but when the horse was called upon to trot weakness of the posterior limbs prevented; this latter fact necessitated the animal's exclusion from the army.—*Zeits. f. Vet.*

ŒSTRUS LARVÆ IN THE PHARYNX.

Limann noticed among a number of other horses more or less afflicted with symptoms of throat irritation, a Remont gelding having evidently but just contracted a laryngitis. In a few days great difficulty was evidenced in the act of deglutition, but no increase in the body heat, or number of respirations. The subaural and parotic regions were not hypertrophied. Nourishing clysters were necessitated by the continued anorexia. Finally pneumonia appeared, and in seven days the patient was a cadaver.

Post-mortem exposed a bilateral pneumonia in the gangrenous stage, and in the stomach, which was much distended, numerous examples of the œstrus; also in the membrane of the pharynx fourteen individual specimens of œstrus.

ATRESIA ANI.

Simader was called to examine a colt just purchased. The animal ate well, and defecated regularly through the labiæ of the vulva. About the breadth of a hand, anterior to the superior angle of the vaginal opening, he detected a fold which contained a congenital foramen. The latter was surrounded by an annular muscle which offered considerable resistance to the introduction of the hand.

In another case, which occurred in the ambulatory clinic connected with the Dresden veterinary school, a two days old pup not only failed to possess a caudal appendage complete or rudimentary, but also neglected to provide itself with any aperture by which feces could be forced from the body. In this animal the scrotum was wanting, but the prepuce was unusually large.—*Repert. d. Thier.*

AMYLOID DEGENERATION IN THE HORSE.

Trasbot communicates that a horse which had suffered twice from acute bronchitis seemed to be troubled subsequently by a more or less distinguishable dyspnoea.

Later on the animal died while upon a very severe journey, under symptoms of internal hemorrhage. Section exposed an emphysematous state of the pulmonary organs, and appreciable dilation of the right heart; the liver was four times its normal dimensions, and weighed over sixty pounds. The same had ruptured, was of a greenish color, and responded to the customary amyloid tests for degeneration in this organ. The abdominal cavity contained twenty quarts of fluid.—*Anacker's Thier.*

SOCIETY MEETINGS.

INDIANA ASSOCIATION OF VETERINARY GRADUATES.

The semi-annual meeting of the Indiana Association of Veterinary Graduates was held in the parlor of the Bundy House, at Newcastle, Ind., August 21st and 22d, 1893.

The President being absent the Vice-President, C. F. Bell, called the first session to order at 3.30 P.M. August 21st. Members present: Drs. C. F. Bell, F. A. Balser, Lee Hoover, Fred. Bragington, C. M. Stull, W. B. Wallace, J. C. Rodgers, O. G. Whitestone and J. E. Cloud.

Minutes of previous meeting read and approved. The Treasurer's and Secretary's reports were read and accepted.

The name of J. H. Mahoney was presented, and on motion of Dr. Hoover, seconded by Dr. Rodgers, he was elected a member of the Association.

Dr. Hoover presented a carefully written and instructive paper on "Omphalo-Phlebitis," following which a general discussion was participated in by all the members present.

Following this was a paper read by Dr. Stull on "Veterinary Legislation." Considering the lateness of the hour discussion of this paper was postponed, and on motion the meeting adjourned for supper, to convene at 7.30 P.M.

During the earlier part of the evening session a general discussion of the paper presented by Dr. Stull was had. The paper and discussion proved of so much interest that a second reading was called for, after which, on motion of Dr. Rodgers seconded by Dr. Hoover, the Secretary was ordered to have the paper printed in pamphlet form, and send a copy to every graduate in the State.

Another motion was presented, whereby the chair appointed Drs. Bell, Balser and Stull to act as a permanent Committee on Legislation.

At this time the subject of "the Indiana Veterinary College" was brought before the Association for consideration, and to determine whether the Association should take any action with regard to the same. After the history of the college, and its work of the past year had been laid before the meeting, quite a lengthy discussion followed, which resulted in a motion that the chair appoint a committee of three to draw up resolutions concerning the college, that a copy of the same be sent to the United States Veterinary Congress, to every graduate in the State, also to be printed in the AMERICAN VETERINARY REVIEW. The committee consisted of Drs. Stull, Rodgers and Hoover.

The resolutions as presented to the Association were as follows:

WHEREAS, We have situated in the city of Indianapolis, State of Indiana, an institution called the Indiana Veterinary College, and the prospectus issued by said institute calling for three sessions of thirteen weeks each, and allowing an empiric to become qualified in one session at the said institution, therefore be it.

Resolved, That we as a body, representing the Indiana Association of Veterinary Graduates, do denounce an institution called the Indiana Veterinary College, situated in the city of Indianapolis, State of Indiana, also graduates and honorary graduates of said institute.

Resolved, That we as a body humbly beseech your honorable body to give this due consideration, as we deem it an unfit institute for obtaining a veterinary education.

On motion of Dr. Stull, seconded by Dr. Rodgers, the report of the Committee on the Revision of the Constitution and By-Laws was accepted as presented by said committee, section by section.

The following committees were then appointed:

Committee on Programme, J. C. Rodgers, C. M. Stull and J. E. Cloud.

Committee on Arrangements, F. A. Balser, J. C. Wallace, C. F. Bell.

The meeting adjourned to meet on the morning of the 22d.

The clinical portion of the programme was carried out by Dr. Balser, assisted by Dr. Whitestone, successfully performing a very difficult as well as interesting operation of a fistulous opening of the œsophagus.

The meeting convened at 8 A.M., August 22d, and the delegates to the United States Veterinary Congress to be held in Chicago, October 16th and 20th, were appointed, consisting of Drs. Stull, Balser and Cloud.

On motion, the rules were suspended and a board of censors was appointed, consisting of Drs. Mahoney, Balser and Wallace.

A motion of Dr. Hoover prevailed, whereby the Association should procure a charter, and the Secretary was ordered to procure one and have the same recorded in State and county in which he resides.

On motion of Dr. Stull, Dr. Galbraith, of Macon, Georgia, was elected an associate member of the Indiana Association of Veterinary Graduates.

A bill presented by Secretary for printing programmes was accepted.

On motion the meeting adjourned to meet at Fort Wayne, on December 6th and 7th, 1893.

J. E. CLOUD, *Secretary*.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

Pursuant to call the tenth semi-annual meeting of the Ohio State Veterinary Medical Association convened in Wells Post Hall (G. A. R.), Columbus, Ohio, at 7:30 P. M., Aug. 30, 1893.

Meeting called to order by President Dr. W. E. Wight. In view of the fact that the State Fair was in progress, with the half fare on all railroads, the attendance was less than expected, only about twenty members being present.

W. T. Davis, D.V.S., of Maryville, Ohio, was proposed for membership, and on motion of Dr. Hillock the rules were suspended, and the Secretary instructed to cast a favorable ballot for the gentleman. The doctor is a graduate of the American Veterinary College, class of '93, and was vouched for by Drs. Bull and Gribble. After a few remarks by the newly elected member, several communications from members expressing their inability to be present were read.

A communication from Dr. W. G. Jones, asking for a withdrawal was read, and after remarks by several members, expressing their sorrow at Dr. Jones' request, in view of the fact that if he desired to withdraw they must grant it, but after an explanation by Dr. N. Jones, it was the unanimous desire of all present that the Secretary write to Dr. Jones in reference to the matter and ask him to reconsider his request.

Moved by Dr. Gribble, supported by Dr. Bull, that the communication of Dr. W. G. Jones lie on the table until the next meeting. Carried.

Dr. J. C. Meyer, Sr., in describing a peculiar case, brought up the first subject for discussion, which was "Azoturia," and such a diversity of opinion in reference to this disease was shown that one could almost say that each and every member had a different opinion.

Dr. Cotton said that Prof. Smith's "Physiology" had given him the best light on this disease. Dr. Jones in his home practice had not considered it a very fatal disease, but lately had some experience with it in Cincinnati, and there a large percentage had died, ten out of twelve; he thought it must be more fatal in large cities than in the country. Dr. Hillock's experience had been just the reverse of this. Some members argued that it required rest, heavy feeding, etc., to bring on the trouble, while several present had seen fatal cases where the animal had been taken off grass and exercised; one where it had simply been ridden to drive up the cows. When it came to treatment, it varied with each individual member, being just as diversified as opinions of its pathology.

It now being quite late the meeting adjourned to meet at 9:30 the following morning.

Meeting called to order by President Wight, at 9:30 A. M. Visitors present, Drs. Berry, Dollahunt, Michener and Dougherty.

Dr. Cotton reported a case of a cow in which he had drawn off per trocar and canula about thirty gallons of fluid from the abdomen in two tapplings, had come on comparatively sudden, yet at post mortem, internal chronic peritonitis was revealed, showing a case of some time standing.

Quite a discussion arose out of the question, "What to do with a broken limb." Some members had been very successful, while others, with apparently simple cases, had no success. The discussion was very interesting.

Dr. Gribble reported three horses dying on one farm, presenting similar symptoms, and asked what the trouble was. It was a large farm, plenty of pasture ground, good water, good care, etc. *Symptoms*.—Temperature 105°, pulse 80° and small. Respiration short and quick, intense weakness, especially of hind limbs; would eat anything, even up to death's door. One thing observed on all was the relaxed condition of the anus; it was wide open (to express it), and with inspiration and expiration the air would pass in and out of rectum. No cough, no sore throat, no discharge from nostrils. Drs

Wight and Hillock called it a form of influenza, yet this view was not agreed with by many; others, that it was the disease called milk sickness or trembles; others malaria. A case like this once seen is never forgotten; with relaxed anus, intense muscular weakness, and appetite, eating anything within reach, weeds or grass, and such high fever with no apparent cause. Was unable to hold post mortem in all cases on account of distance from home.

Dr. Waddle gave his experience in the treatment of tetanus.

Dr. Carl described a case of a cow with enlarged larynx, causing death.

Many other cases were described and discussed to the advantage of all present.

Dr. Cotton gave notice that at the next meeting he would present to the Association for its consideration an amendment to the constitution, providing for a radical change in the code of ethics, as they were thought by many to be too ironclad.

A motion was made by Dr. Gribble, supported by Dr. Cotton, that at the next annual meeting a committee be appointed to arrange for an annual banquet to be had at that time. Carried.

No further business appearing, and it being near time for dinner, the meeting adjourned *sine die*.

WM. H. GRIBBLE, D.V.S., Sec'y.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

A regular quarterly meeting of the California State Veterinary Medical Association was held September 13th, at the Baldwin Hotel, San Francisco, President Dr. W. F. Egan in the chair.

Upon roll call the following gentlemen responded to their names: Drs. Egan, Maclay, Spencer, Sr., Spencer, Jr., Fox, Wadams, Burns, Orvis and Archibald. Visitors—Drs. Patterson, Robin, Jackson, Williams, Hogarty and Dalziel.

Minutes of the previous meeting were read and approved.

The reading of papers, discussions, etc., brought Dr. H.

A. Spencer, of San Jose, to his feet with an excellent and instructive paper on "Gastro-hysterotomy." The essayist gave the history of the operation, the origin of which dated back before Christ. He then went on to describe the operation in detail as operated by him on a bitch. He also described his after treatment, etc. The President then declared discussion to be in order. Dr. Maclay arose and complimented the essayist on the successful issue of the operation. Drs. Fox, Spencer, Jr., and the Secretary also joined the discussion and gave their views on the subject. The discussion was followed by a few well chosen remarks by the President.

The Secretary was then called upon to entertain the meeting, which he endeavored to do by reading a few notes on an operation witnessed by him. The operation was the extirpation of a tubo-ovarian cyst. The essayist described the operation as seen by him, giving the after treatment, etc., also giving a short treatise on the cause of the lesion. The paper was followed by a discussion which was participated in by most of the members present.

The Secretary then brought up a subject upon which he desired to obtain the views of the members. The matter was the treatment of sores which jacks and mules are much subject to. He described a case in a two-year-old thoroughbred colt which he was at that time treating. He gave the methods and treatment which he had applied to said case, with results. Dr. A. Robin favored the use of ung. hyd. nit. Dr. A. S. Williams said that he had had considerable experience with the subject under discussion, and that the most beneficial treatment he had found was ung. hyd. nit. Dr. Spencer, Jr., uses phytolacca both internally and externally. Dr. Spencer, Sr., claimed to have good results with a paste composed of zinc. chl. sanguinaria and flour. Dr. Wadams uses the actual cautery, followed by iodoform. Dr. Orvis said he never had much success with the disease, but he favored the actual cautery followed by astringents. The Secretary said that he always advised his clients who were unfortunate enough to possess a jack affected with these sores, to put them

in fly-tight, loose boxes during the day, turning them out at night to exercise.

The Secretary then proposed the names of the following practitioners for membership: Drs. A. Paterson, G. F. Falkner, A. Robin, H. Fabbi, H. A. Forrest, A. S. Willians, H. R. Jackson, G. J. Hogarty and I. B. Dalziel. The names were ordered referred to the Board of Examiners.

Under the head of new business, the Secretary read a communication from the Secretary of the United States Veterinary Medical Association, asking the society to appoint delegates to represent the local organization at the International Congress in Chicago. The matter was discussed at some length by the Secretary, who endeavored to point out the benefits the society would receive by sending delegates to the International Congress; he also spoke at some length on the intentions of the national organization, and the manner in which they intended to benefit the veterinary profession in the United States. He implored the members of the society to join the national organization, and pointed out the advantages they would gain by such a procedure. He said the expense of joining the national association was comparatively small, and that any one who joined would be fully repaid in the future.

On motion by Dr. Maclay, the Secretary was instructed to write to the secretary of the national association and thank him for his kind invitation; also to acquaint him of the fact that the society was not in a position financially at the present time to accept his invitation, as the Association had lately gone to considerable expense in legislative matters.

The Secretary then presented a written notice that at next meeting he intended to amend the Constitution and By-Laws, as owing to the passage of an act entitled an "Act to Regulate the Practice of Veterinary Medicine and Surgery in the State of California" at the last legislature, some changes were necessary. The notice was referred to the Board of Directors.

Nominations for officers for the ensuing year being in order, they were made as follows: President, Dr. H. A. Spencer;

Vice-President, Dr. Ward B. Rowland; Secretary, no nominations; Treasurer, Dr. D. F. Fox; Board of Examiners—Drs. Maclay, Yan, Orvis, Rowland and Whittlesey; Board of Directors—the officers of the Association.

On motion of the Secretary the name of J. C. C. Price was dropped from the roll of membership.

On motion by Dr. Wadams a vote of thanks was tendered the essayists for the masterly manner in which they had entertained the meeting.

The following gentlemen were appointed essayists for next meeting: Drs. Maclay, Orvis and Archibald.

There being no further business before the meeting, it adjourned to meet in Sacramento, December 13th, 1893.

R. A. ARCHIBALD, *Sec'y.*

ILEO CYSTIC FISTULA.—Department Veterinarian Heyne reports a cow manifesting general disturbance in health, continued weakness, and finally a progressive diarrhœa, had died in a remarkably short while. The abduction revealed an adhesion about two inches from the ileo-cæcal opening, between the ileum and the bladder, at which point a communication three centimeters in caliber had been established.

The foramen was circumscribed by a tough fibro-cartilaginous ring, the cut section of which was white, smooth and shiny. In the vicinity of the aperture the mucous membrane had become hypertrophied; the walls of the bladder here indicated a thickness of one and a half inches.—*Berliner Thier. Woch.*

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